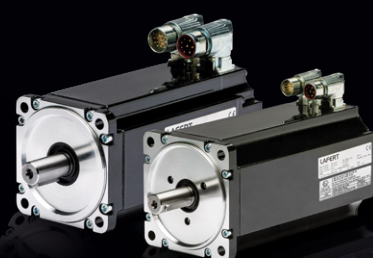
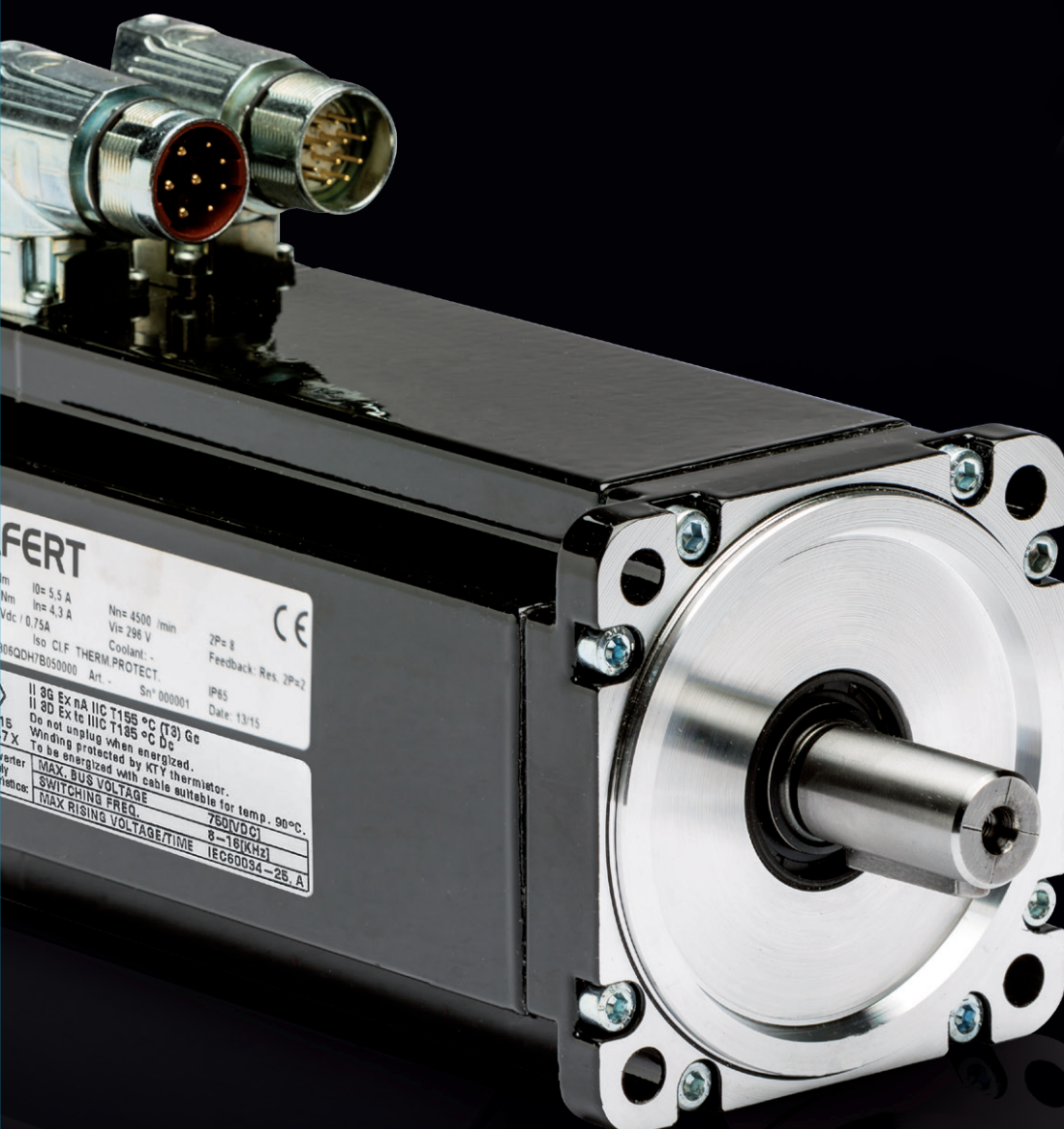


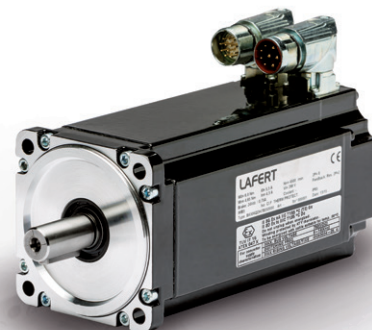
ATEX SERVO MOTORS

BRUSHLESS SERVO MOTORS
ATEX - ZONE 2 AND 22



Brushless Servo Motors in compliance with **Explosive Atmospheres Directive (ATEX) 2014/34/EU** of the European Parliament and the Council of 23 March 1994 on the approximation of the laws of the Member States, concerning equipment and protective system intended for use in potentially explosive atmospheres and also in compliance with Standard EN IEC 60079-0:2018, EN IEC 60079-7:2015/A1:2018, EN IEC 60079-31:2014 and IEC 60034-1:2017.

The motors are suitable for "normal" working mode with protection level "increased" in ATEX category 3G for Gas and 3D for Dust.



STANDARDS

EN 60079-0: 2018	Explosive atmospheres Part 0: Equipment – General requirements
EN 60079-7: 2015/A1:2018	Explosive atmospheres Part 7: Equipment protection by increased safety "e"
EN 60079-31: 2014	Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure "t"
EN 60034-1: 2017	Rotating electrical machines Part 1: Rating and performance

TARGET APPLICATION – Zone 2 and 22

- Paintings Robots
- Printing Machines
- Plastic Manufacturing
- Chemical, Petrochemical and Pharmaceutical Industry
- Waste Treatment Plants
- Food Facilities with non conductive dust
- Industrial Plants with conductive dust

MARKING

• II 3G Ex ec IIC T155°C (T3) Gc

The protection method applied for the zone 2 (Gas) is "increased safety ec" which lead to a protection level EPL Gc.

- II = surface industry
- 3G = category 3, Gas for installation in zone 2:
explosive atmospheres for maximum 10 hours/year
- Ex ec = protection mode increased safety
- IIC = type of allowed gas
- T155°C = maximum external and internal temperature of the motor
- Gc = equipment protection level

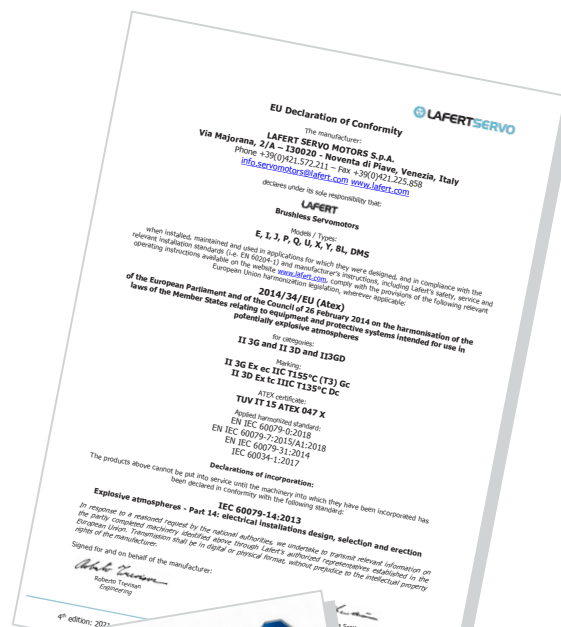
• II 3D Ex tc IIIC T135°C Dc

The protection method applied for the zone 22 (Dust) is "by enclosure tc" which lead to a protection level EPL Dc.

The maximum surface motor temperature is 135 °C.

- II = surface industry
- 3D = category 3, Dust for installation in zone 22:
explosive atmospheres for maximum 10 hours/year
- Ex tc = protection mode by enclosure
- IIIC = type of allowed dust
- T135°C = maximum external surface temperature of the motor
- Dc = equipment protection level

	II 3G Ex ec IIC T155 °C (T3) Gc II 3D Ex tc IIIC T135 °C Dc	
	LAFERT WARNING: DO NOT SEPARATE WHEN ENERGIZED Winding protected by thermistor To be energized with cable suitable for temp. 80C.	
For converter operations	Max Bus Voltage	622 [VDC]
	Switching Frequency	8 - 16 [KHz]
	Speed Range	5 - ∞ [rpm] Variable Speed
	Impulse voltage amplitude according to IEC 60034-25 and 60034-18-41:	
	Phase to phase	≤ 3000 [V]
	Phase to ground	≤ 2100 [V]



PERFORMANCE DATA - ATEX SERVO MOTORS SERIES

Type	Stall torque M ₀ Nm	Rated speed					Length with resolver	
		1500	2000	3000	4500	6000	Without brake L	With Brake L
B28.D2Q	0.25	-	-	-	-	0.18	93.5	123.5
B28.D5Q	0.5	-	-	0.46	-	0.4	105.5	135.5
B28.D7Q	0.75	-	-	0.71	-	0.63	117.5	147.5
B28.01Q	1	-	-	0.96	-	0.86	129.5	159.5
B28.E2Q	1.25	-	-	1.21	-	1.1	141.5	171.5
B30.D7J	0.7	-	-	0.64	-	0.6	83.5	112.5
B30.E4J	1.4	-	-	1.27	-	1.1	104	133
B36.D6Q	0.6	-	-	0.55	-	0.5	112	147
B36.E2Q	1.2	-	-	1.1	-	1	127	162
B36.E8Q	1.8	-	-	1.65	-	1.5	142	177
B36.F4Q	2.4	-	-	2.2	-	2	167	198
B36.03Q	3	-	-	2.7	-	2.4	182	213
B40.D7J	0.7	-	-	0.6	-	0.4	86	116
B40.E4J	1.4	-	-	1.2	-	0.9	97.5	127.5
B40.F7J	2.7	-	-	2.4	-	1.9	120	150
B56.E3Q	1.35	-	-	1.3	-	1	122	157
B56.F6Q	2.6	-	-	2.4	-	1.7	145	180
B56.G5Q	3.4	-	-	2.9	-	2	160	195
B56.H5Q	4.2	-	-	3.5	-	2.3	180	215
B63.04Q	4	-	-	3.3	3	2.4	150	182
B63.06Q	6	-	-	4.8	4.1	3.3	170	203
B63.08Q	7.8	-	-	5.8	4.7	3.5	194	226
B63.10Q	9.4	-	-	6.6	5.1	3.5	214	246
B63.06Y	6	-	-	5.5	4.7	-	168	204.5
B63.08Y	8	-	-	7	6	-	183	219.5
B63.10Y	10	-	-	8.5	7.1	-	198	234.5
B63.12Y	12	-	-	9.8	8	-	213	249.5
B63.14Y	14	-	-	10.7	8	-	233	269.5
B71.04Q	4.5	-	4.2	4	3.7	-	148	183
B71.08Q	8.7	-	7.6	7.1	6.3	-	173	208
B71.12Q	12.5	-	11	10.3	8.5	-	198	228
B71.16Q	15.5	-	12.9	11.6	9.2	-	223	253
B71.20Q	18.7	-	14.6	12.6	9.7	-	248	273
B71.26Q	24.8	-	19	15.6	-	-	298	318
B71.29Q	28.5	-	21.7	17.7	-	-	338	380
B71.32Q	31.2	-	23.6	19	-	-	360	402
B71.35Q	34.4	-	24.5	19.5	-	-	383	425
B71.38Q	37.5	-	26.5	21	-	-	405	447
B10.20J	19	-	16.8	15.2	-	-	195	225
B10.28J	27	-	22.9	20.1	-	-	218	248
B10.36J	35	-	29	25	-	-	240*	270*
B10.42J	42	-	34.9	29.1	-	-	263*	293*
B10.56J	56	-	44	34.7	-	-	308*	338*
B10.68J	68	-	50.9	39.2	-	-	369	399
B10.80J	80	-	57.8	44	-	-	414	444
B13.42I	42	35.5	32.5	26.1	-	-	293	343
B13.58I	58	47	42	31.2	-	-	333	383
B13.73I	73	58.5	51.9	35.7	-	-	373	423
B13.81I	77	61.5	54.2	36.8	-	-	393	443
B13.98I	90	67.7	57.3	39.1	-	-	433	483
B13.C2I	106	82.6	68.8	43.1	-	-	493	543
B16.C4Q	140	95.3	74.9	-	-	-	422	502
B16.C8Q	180	121	89.3	-	-	-	482	562
B16.B4Q	240	133	94.8	-	-	-	572	652
B16.300Q	300	165	111	-	-	-	662	742

* Motors with size 1.5 connectors have an additional length of 16 mm

BRAKE DATA

	Symbol	B28Q	B30J	B36Q	B40J	B56Q	B63Q	B63Y	B71Q		B100J	B132I	B16Q	Unit
									[4.5-26]	[29-38]				Nm
Holding torque 100°C	Mrb	2.1	2.1	3.2	3.2	3.5	8	17	15	33	60	120	300	Nm
Voltage	Urb	24	24	24	24	24	24	24	24	24	24	24	24	Vdc ±10%
Resistance	Rbr	70.6	70.6	53.2	53.2	53.2	29	30.8	24	24	28.3	11.6	13.7	Ohm
Electrical Power	Pbr	8.2	8.2	10.8	10.8	10.8	19.9	18.7	24	24	20.4	50	41.8	W
Current	Ibr	0.34	0.34	0.45	0.45	0.45	0.83	0.78	1.0	1.0	0.85	2.08	1.75	Adc
Additional* rotor inertia	Jbr	0.12	0.12	0.38	0.38	0.38	0.69	3.6	1.66	9.5	32	52.9	200	Kgcm ²
Opening (release) time	to max	30	30	60	60	60	55	75	50	110	155	190	350	ms
Closing (fall in) time	tc mac	15	15	10	10	10	38	25	30	70	65	90	300	ms
Additional* motor weight	mbr	0.5	0.5	0.35	0.6	0.6	0.89	1.5	1.5	2.5	3.8	5.35	12.9	kg

*Additional values are related to motor data when the brake is mounted on the motor of the respective size, these values differ from the brake data in unmounted condition

PERFORMANCE DATA - ATEX ULTRA COMPACT SERVO MOTORS SERIES

Type	Stall torque M _s Nm	Rated speed n 1/min				Length with resolver	
		2200	3000	4500	6000	Without brake L	With Brake L
B28.D4U	0.36		-	-	0.33	96	124.5
B28.D7U	0.65		-	0.64	0.61	107	135.5
B28.01U	0.95		-	0.90	0.79	118	146.5
B28.E2U	1.20		-	1.08	0.97	129	157.5
B28.E4U	1.40		-	1.25	1.10	140	168.5
B56.F6U	2.6		2.5	-	2.1	111	141
B56.G5U	3.5		3.3	-	2.6	123	153
B56.H6U	4.6		4.1	-	3.1	144	183
B56.I5U	5.5		4.6	-	3.2	156	195
B63.H5U	4.5		3.7	-	2.8	132	170
B63.06U	6.2		4.8	-	3.3	150	188
B63.08U	7.9		5.8	-	3.5	168	206
B63.10U	9.4		6.6	-	3.5	186	229
B63.12U	10.8		7.0	-	2.5	204	247
B64.06U	6.5		5.6	4.8	-	150	190
B64.11U	11.5		9.0	6.6	-	180	220
B64.15U	15.5		11.8	8.4	-	210	250
B64.19U	19.0		13.2	8.9	-	240	280
B71.12U	12.5	10.3	9.5	7.8	-	149	189
B71.17U	17.0	13.8	12.2	9.2	-	166	206
B71.21U	21.5	16.5	14.5	10.1	-	183	234
B71.26U	26.0	19.4	16.8	-	-	205	251
B71.30U	30.0	22.3	18.8	-	-	222	268

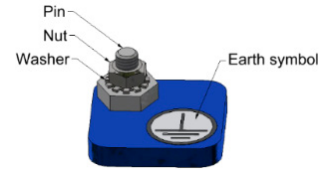
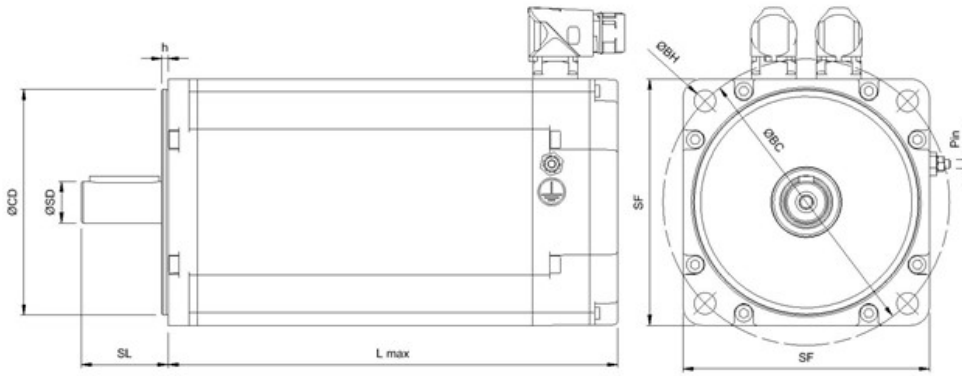
BRAKE DATA

	Symbol	B28U		B56U		B63U		B64U	B71U		Unit
		[0.36-1.2]	[1.4]	[2.6-3.5]	[4.6-5.5]	[4.5-8.4]	[10.2-11.7]		[4.5-26]	[29-38]	
Holding torque 100°C	Mrb	2.1	1.5	3.2	8	8	15	17	15	33	Nm
Voltage	Urb	24	24	24	24	24	24	24	24	24	Vdc ±10%
Resistance	Rbr	70.6	70.6	53.2	29	29	24	30.8	24	24	Ohm
Electrical Power	Pbr	8.2	8.2	10.8	19.9	19.9	24	18.7	24	24	W
Current	Ibr	0.34	0.34	0.45	0.83	0.83	1.0	0.78	1.0	1.0	Adc
Additional* rotor inertia	Jbr	0.12	0.12	0.38	0.69	0.69	1.66	3.6	1.7	9.5	Kgcm ²
Opening (release) time	to max	30	30	60	55	55	50	75	50	110	ms
Closing (fall in) time	tc mac	15	15	10	38	38	30	25	30	70	ms
Additional* motor weight	mbr	0.5	0.45	0.6	1.1	1.1	1.1	1.5	1.5	3.5	kg

* Additional values are related to motor data when the brake is mounted on the motor of the respective size, these values differ from the brake data in unmounted condition



MECHANICAL DATA



Motor type	Cable section	Pin
B28 ÷ B100	≤16 mm ²	M5
B132 ÷ B160	>16 mm ²	M6

ATEX SERVO MOTORS SERIES

TYPE	Square Flange	Stall Torque	Centering Diameter	Bold Circle Diameter	Bold Hole Diameter	Shaft: Diameter x Length
	SF [mm]	[Nm]	$\varnothing CD \times h$ [mm]	$\varnothing BC$ [mm]	$\varnothing BH$ [mm]	$\varnothing SD \times SL$ [mm]
B28Q	58	0.36 – 1.40	$\varnothing 40j6 \times 2.5$	$\varnothing 63$	$\varnothing 5.5$	$\varnothing 9j6 \times 20$
B30J	60	0.7 – 1.4	$\varnothing 50h7 \times 3$	$\varnothing 70$	$\varnothing 5.8$	$\varnothing 14h6 \times 25/30$
B36Q	70	0.6 - 1.8	$\varnothing 60j6 \times 2.5$	$\varnothing 75$	$\varnothing 5.8$	$\varnothing 11j6 \times 23$
		2.4 - 3.0				$\varnothing 14j6 \times 30$
B40J	80	0.7 – 2.7	$\varnothing 70h7 \times 3$	$\varnothing 90$	$\varnothing 6.6$	$\varnothing 16h6 \times 35/40$
B56Q	91.3	1.35-4.2	$\varnothing 80j6 \times 3$	$\varnothing 100$	$\varnothing 6.5$	$\varnothing 14j6 \times 30$
B63Q	100	4.0-9.4	$\varnothing 95j6 \times 3$	$\varnothing 115$	$\varnothing 9$	$\varnothing 19k6 \times 40$
B63Y	130	6 - 8	$\varnothing 110j6 \times 3$	$\varnothing 130$	$\varnothing 9$	$\varnothing 19j6 \times 40$
		10 - 14				$\varnothing 24j6 \times 50$
B71Q	142	4 - 26	$\varnothing 130j6 \times 3.5$	$\varnothing 165$	$\varnothing 12.5$	$\varnothing 24k6 \times 50$
		29 - 38				$\varnothing 28j6 \times 58$
B10J	190	20 - 42	$\varnothing 180j6 \times 4$	$\varnothing 215$	$\varnothing 15$	$\varnothing 32k6 \times 58$
		56 - 80				$\varnothing 38k6 \times 80$
B13I	240	42 - 73	$\varnothing 230j6 \times 4$	$\varnothing 265$	$\varnothing 14.5$	$\varnothing 38k6 \times 80$
		81 - 120				$\varnothing 42k6 \times 110$
B16Q	270	140 - 240	$\varnothing 250h7 \times 5$	$\varnothing 300$	$\varnothing 18.5$	$\varnothing 55m6 \times 110$
		300				$\varnothing 60m6 \times 140$

ATEX ULTRA COMPACT SERVO MOTORS SERIES

TYPE	Square Flange	Stall Torque	Centering Diameter	Bold Circle Diameter	Bold Hole Diameter	Shaft: Diameter x Length
	SF [mm]	[Nm]	$\varnothing CD \times h$ [mm]	$\varnothing BC$ [mm]	$\varnothing BH$ [mm]	$\varnothing SD \times SL$ [mm]
B28U	58	0.36 – 1.20	$\varnothing 40j6 \times 2.5$	$\varnothing 63$	$\varnothing 5.5$	$\varnothing 9j6 \times 20$
		1.40				$\varnothing 11j6 \times 23$
B56U	91.3	2.6 – 3.5	$\varnothing 80j6 \times 3$	$\varnothing 100$	$\varnothing 6.5$	$\varnothing 14j6 \times 30$
		4.6 – 5.5				$\varnothing 19j6 \times 40$
B63U	100	4.5 – 9.4	$\varnothing 95j6 \times 3$	$\varnothing 115$	$\varnothing 9$	$\varnothing 19j6 \times 40$
		10.8				$\varnothing 24j6 \times 50$
B64U	116	6.5 – 19.0	$\varnothing 110j6 \times 3$	$\varnothing 130$	$\varnothing 9$	$\varnothing 24j6 \times 50$
B71U	142	12.5 – 21.5	$\varnothing 130j6 \times 3.5$	$\varnothing 165$	$\varnothing 12.5$	$\varnothing 24j6 \times 50$
		26.0 – 30.0				$\varnothing 32k6 \times 58$

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